

Listing of Claims:

1. (Currently Amended) In a method of encoding multiword information, which includes the steps of encoding information into first code words of an error correcting code over a first Galois field, and arranging a number of the first code words in the columns of a code block comprising a user data sub-block and a parity data sub-block, wherein said code block comprises the first code words over the first Galois field arranged in the columns of said code block, a method of embedding an additional layer of error correction into the error correcting code, said method comprising the steps of:

adding bits of a predetermined number to the first code words to form second code words over a second Galois field arranged in the columns of said code block, wherein the bits have different bit values and comprise an identical sequence of bits added to each row;

encoding ~~the~~ rows of at least said user data sub-block

separately or in groups using a horizontal error correcting code over ~~a~~ the second Galois field larger than said first Galois field to obtain horizontal parities; and

embedding said horizontal parities as ~~an~~ the additional layer in said error correcting code.

2. (Currently Amended) The method as claimed in claim 1, wherein ~~a predetermined number of~~ the bits having a predetermined value is added to each symbol of said user data sub-block before encoding the rows of said user-data sub-block.

3. (Currently Amended) The method as claimed in claim 2, wherein one or two the bits having bit value zero are added to each symbol of said user data sub-block.

4. (Previously Presented) The method as claimed in claim 1, wherein said first Galois field is  $GF(2^8)$ , and wherein said code block is a Long Distance Code (LDC) block comprising LDC code words over the first Galois field  $GF(2^8)$ , arranged in the columns of said LDC block.

5. (Previously Presented) The method as claimed in claim 4, wherein in said encoding the rows step, each row of said user data sub-block is encoded separately using a [306, 304, 3] Reed Solomon code over a Galois field  $GF(2^9)$ .

6. (Previously Presented) The method as claimed in claim 4, wherein in said encoding the rows step, each row of said user data sub-block is encoded separately using a subspace subcode of a Reed Solomon code over a Galois field  $GF(2^9)$ .

7. (Previously Presented) The method as claimed in claim 4, wherein in said encoding the rows step, the rows of said user data sub-block are encoded in groups of three consecutive rows using a Reed Solomon code over a Galois field  $GF(2^{10})$ .

8. (Previously Presented) The method as claimed in claim 4, wherein in said encoding the rows step, the rows of said user data sub-block are encoded in groups of three consecutive rows using a subspace subcode of a Reed Solomon code over a Galois field  $GF(2^{10})$ .

Claims 9 (Canceled)

10. (Previously Presented) The method as claimed in claim 1, wherein said horizontal parities are encoded by a Burst Indicator Subcode (BIS) comprising Reed Solomon code words over  $GF(2^8)$ .

11. (Withdrawn) A method of decoding an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein information is encoded into code words of said code over a first Galois field and wherein a number of code words are arranged in the columns of a code block comprising a user data sub-block and a parity data sub-block, said method comprising the steps of:

- extracting said horizontal parities from said error correcting code,
- decoding the rows of at least said user data sub-block separately or in groups using the horizontal error correcting code, which had been used for encoding in the method of claim 1, over the second Galois field larger than said first Galois field using said

horizontal parities.

12. (Currently Amended) An apparatus for embedding an additional layer of error correction into an error correcting code, wherein information is encoded into first code words of said code over a first Galois field, and wherein a number of the first code words are arranged in the columns of a code block comprising a user data sub-block and a parity data sub-block, wherein said code block comprises the first code words over the first Galois field arranged in the columns of said code block, said apparatus comprising:

means for receiving the error correcting code;

means for adding bits of a predetermined number to the first code words to form second code words over a second Galois field arranged in the columns of said code block, wherein the bits have different bit values and comprise an identical sequence of bits added to each row;

means for encoding the rows of at least said user data sub-block separately or in groups using a horizontal error correcting code over a second Galois field larger than said first Galois field, thereby forming at least horizontal parities;

means for embedding said horizontal parities as additional layer in said error correcting code; and

means for outputting said modified error correcting code.

13. (Withdrawn) Apparatus for decoding an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein information is encoded into code words of said code over a first Galois field and wherein a number of code words are arranged in the columns of a code block comprising a user data sub-block and a parity data sub-block, comprising:

- means for extracting said horizontal parities from said error correcting code,
- means for decoding the rows of at least said user data sub-block separately or in groups using the horizontal error correcting code, which had been used for encoding in the method of claim 1, over the second Galois field larger than said first Galois field using said horizontal parities.

14. (Withdrawn) Storage medium storing data in form of code

words of an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block comprising a user data sub-block and a parity data sub-block.

15. (Withdrawn) Signal comprising data in form of code words of an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block comprising a user data sub-block and a parity data sub-block.

16. (Withdrawn) Computer program comprising program code means for causing a computer to implement the steps of the method of claim 1 when said program is run on a computer.